Outcomes for Ordinary Differential Equations & MVC

- Students will be able to

1. **identify** first order ordinary differential equations, **tell** Laplace transform formulae, **define** functions of several variables.
2. **understand** basic concepts of higher order ordinary differential equations, level curves and level surfaces.
3. **solve** linear differential equations using different methods, **find** Laplace transforms of functions using properties and theorems, **evaluate** directional derivatives and extreme values.
4. **prove** theorems, **solve** ordinary differential equations using Laplace transforms, **identify** orthogonal trajectories, optimize functions subject to given constraints.
5. **apply** concepts of ordinary differential equations and multivariate calculus to various applications including real life problems.

Outcomes for Vector Calculus & Partial Differential Equations

Students will be able to

1. **know** and **recall** double / triple integrals, vector differentiation, vector integration, partial differential equations.
2. **understand** basic concepts of co-ordinate systems, iterated integrals, gradient, divergence and curl.
3. **evaluate** multiple integrals, **find** area / mass / volume using multiple integrals, **evaluate** line integrals and surface integrals.
4. **prove** theorems, **apply** Green's / Stoke's / Divergence theorem to different type of problems, **model** one dimensional heat / wave equations, **solve** partial differential equations.
5. **apply** concepts of vector calculus and partial differential equations to various applications including real life problems.